

**HYDROCORTISONE BUTYRATE - hydrocortisone butyrate cream**  
**HYDROCORTISONE BUTYRATE - hydrocortisone butyrate ointment**  
**HYDROCORTISONE BUTYRATE - hydrocortisone butyrate solution**  
Taro Pharmaceuticals U.S.A., Inc.

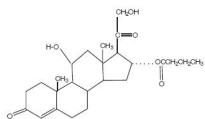
**Rx Only.**

**For Dermatological Use Only.**

## DESCRIPTION

Hydrocortisone Butyrate Ointment, Cream and Topical Solution contain the topical corticosteroid hydrocortisone butyrate, a non-fluorinated hydrocortisone ester. It has the chemical name: (11 $\beta$ )- 11,21- dihydroxy-17-[(1-oxobutyl)oxy]- pregn-4-ene-3,20-dione; the molecular formula: C<sub>25</sub>H<sub>36</sub>O<sub>6</sub>; the molecular weight: 432.54; and the CAS registry number: 13609-67-1.

Its structural formula is:



### Hydrocortisone Butyrate Ointment, 0.1%

Each gram of hydrocortisone butyrate ointment contains 1.0 mg of hydrocortisone butyrate in a base consisting of mineral oil and polyethylene.

### Hydrocortisone Butyrate Cream USP, 0.1%

Each gram of hydrocortisone butyrate cream contains 1.0 mg of hydrocortisone butyrate in a hydrophilic base consisting of cetomacrogol 1000, cetostearyl alcohol, light mineral oil, white petrolatum, citric acid, sodium citrate, propylparaben and butylparaben (preservatives) and purified water.

### Hydrocortisone Butyrate Topical Solution, 0.1%

Each mL of hydrocortisone butyrate topical solution contains 1.0 mg of hydrocortisone butyrate in a vehicle consisting of isopropyl alcohol (50%), glycerin, povidone, citric acid, sodium citrate and purified water.

## CLINICAL PHARMACOLOGY

Topical corticosteroids share anti-inflammatory, anti-pruritic and vasoconstrictive actions.

The mechanism of anti-inflammatory activity of the topical corticosteroids is unclear. Various laboratory methods, including vasoconstrictor assays are used to compare and predict potencies and/or clinical efficacies of the topical corticosteroids. There is some evidence to suggest that a recognizable correlation exists between vasoconstrictor potency and therapeutic efficacy in man.

### Pharmacokinetics

The extent of percutaneous absorption of topical corticosteroids is determined by many factors including the vehicle, the integrity of the epidermal barrier, and the use of occlusive dressings.

Topical corticosteroids can be absorbed from normal intact skin. Inflammation and/or other disease processes in the skin increase percutaneous absorption. Occlusive dressings substantially increase the percutaneous absorption of topical corticosteroids.

Thus, occlusive dressings may be a valuable therapeutic adjunct for treatment of resistant dermatoses. (See **DOSAGE AND ADMINISTRATION**.)

Once absorbed through the skin, topical corticosteroids are handled through pharmacokinetic pathways similar to systemically administered corticosteroids. Corticosteroids are bound to plasma proteins in varying degrees. Corticosteroids are metabolized primarily in the liver and are then excreted by the kidneys. Some of the topical corticosteroids and their metabolites are also excreted into the bile.

## INDICATIONS AND USAGE

Hydrocortisone Butyrate Ointment, 0.1% and Hydrocortisone Butyrate Cream USP, 0.1% are indicated for the relief of the inflammatory and pruritic manifestations of corticosteroid-responsive dermatoses.

Hydrocortisone Butyrate Topical Solution, 0.1% is indicated for the relief of the inflammatory and pruritic manifestations of seborrheic dermatitis.

## CONTRAINDICATIONS

Topical corticosteroids are contraindicated in those patients with a history of hypersensitivity to any of the components of the preparation.

## PRECAUTIONS

### General

Systemic absorption of topical corticosteroids has produced reversible hypothalamic-pituitary-adrenal (HPA) axis suppression, manifestations of Cushing's syndrome, hyperglycemia, and glucosuria in some patients. Conditions which augment systemic absorption include the application of the more potent steroids, use over large surface areas, prolonged use, and the addition of occlusive dressings.

Therefore, patients receiving a large dose of a potent topical steroid applied to a large surface area or under an occlusive dressing should be evaluated periodically for evidence of HPA axis suppression by using the urinary free cortisol and ACTH stimulation tests. If HPA axis suppression is noted, an attempt should be made to withdraw the drug, to reduce the frequency of application, or to substitute a less potent steroid.

Recovery of HPA axis function is generally prompt and complete upon discontinuation of the drug. Infrequently, signs and symptoms of steroid withdrawal may occur, requiring supplemental systemic corticosteroids.

Children may absorb proportionally larger amounts of topical corticosteroids and thus be more susceptible to systemic toxicity. (See **PRECAUTIONS – Pediatric Use.**) If irritation develops, topical corticosteroids should be discontinued and appropriate therapy instituted.

In the presence of dermatological infections, the use of an appropriate antifungal or antibacterial agent should be instituted. If a favorable response does not occur promptly, the corticosteroid should be discontinued until the infection has been adequately controlled.

### Information for the Patient

Patients using topical corticosteroids should receive the following information and instructions:

1. This medication is to be used as directed by the physician. It is for external use only. Avoid contact with the eyes.
2. Patients should be advised not to use this medication for any disorder other than for which it was prescribed.
3. The treated skin area should not be bandaged or otherwise covered or wrapped as to be occlusive unless directed by the physician.
4. Patients should report any signs of local adverse reactions especially under occlusive dressing.
5. Parents of pediatric patients should be advised not to use tight-fitting diapers or plastic pants on a child being treated in the diaper area, as these garments may constitute occlusive dressings.

### Laboratory Tests

The following tests may be helpful in evaluating the HPA axis suppression:

Urinary free cortisol test

ACTH stimulation test

### Carcinogenesis, Mutagenesis, and Impairment of Fertility

Long-term animal studies have not been performed to evaluate the carcinogenic potential or the effect on fertility of topical corticosteroids.

Studies to determine mutagenicity with prednisolone and hydrocortisone have revealed negative results.

### Pregnancy Category C

Corticosteroids are generally teratogenic in laboratory animals when administered systemically at relatively low dosage levels. The more potent corticosteroids have been shown to be teratogenic after dermal application in laboratory animals. There are no adequate and well-controlled studies in pregnant women on teratogenic effects from topically applied corticosteroids. Therefore, topical corticosteroids should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus. Drugs of this class should not be used extensively on pregnant patients, in large amounts, or for prolonged periods of time.

### Nursing Mothers

It is not known whether topical administration of corticosteroids could result in sufficient systemic absorption to produce detectable quantities in breast milk. Systemically administered corticosteroids are secreted into breast milk, in quantities *not* likely to have a deleterious effect on the infant. Nevertheless, caution should be exercised when topical corticosteroids are administered to a nursing woman.

### Pediatric Use

*Pediatric patients may demonstrate greater susceptibility to topical corticosteroid-induced HPA axis suppression and Cushing's syndrome than mature patients because of a larger skin surface area to body weight ratio.*

Hypothalamic-pituitary-adrenal (HPA) axis suppression, Cushing's syndrome, and intracranial hypertension have been reported in children receiving topical corticosteroids. Manifestations of adrenal suppression in children include linear growth retardation, delayed

weight gain, low plasma cortisol levels, and absence of response to ACTH stimulation. Manifestations of intracranial hypertension include bulging fontanelles, headaches, and bilateral papilledema.

Administration of topical corticosteroids to children should be limited to the least amount compatible with an effective therapeutic regimen. Chronic corticosteroid therapy may interfere with the growth and development of children.

### ADVERSE REACTIONS

The following local adverse reactions are reported infrequently with topical corticosteroids, but may occur more frequently with the use of occlusive dressings. These reactions are listed in an approximate decreasing order of occurrence: burning, itching, irritation, dryness, folliculitis, hypertrichosis, acneiform eruptions, hypopigmentation, perioral dermatitis, allergic contact dermatitis, maceration of the skin, secondary infection, skin atrophy, striae, miliaria.

### OVERDOSAGE

Topically applied corticosteroids can be absorbed in sufficient amounts to produce systemic effects. (See **PRECAUTIONS**.)

### DOSAGE AND ADMINISTRATION

Hydrocortisone Butyrate Ointment, 0.1% or Hydrocortisone Butyrate Cream USP, 0.1% should be applied to the affected area as a thin film two or three times daily depending on the severity of the condition.

Occlusive dressings may be used for the management of psoriasis or recalcitrant conditions.

If an infection develops, the use of occlusive dressings should be discontinued and appropriate antimicrobial therapy instituted.

Hydrocortisone Butyrate Topical Solution, 0.1% should be applied to the affected area as a thin film two or three times daily depending on the severity of the condition.

### HOW SUPPLIED

**Hydrocortisone Butyrate Ointment, 0.1%** is supplied in tubes containing:

5 g NDC 51672-4083-5 (as physician samples)	30 g NDC 51672-4083-2
10 g NDC 51672-4083-7	45 g NDC 51672-4083-6
15 g NDC 51672-4083-1	

**Hydrocortisone Butyrate Cream USP, 0.1%** is supplied in tubes containing:

5 g NDC 51672-4074-5 (as physician samples)	30 g NDC 51672-4074-2
10 g NDC 51672-4074-7	45 g NDC 51672-4074-6
15 g NDC 51672-4074-1	

**Hydrocortisone Butyrate Topical Solution, 0.1%** is supplied in polyethylene bottles containing:

20 mL NDC 51672-4061-2	60 mL NDC 51672-4061-4
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### STORAGE

Hydrocortisone Butyrate Ointment, 0.1%: **Store between 2°-30°C (36°-86°F).**

Hydrocortisone Butyrate Cream USP, 0.1%: **Store between 20° to 25°C (68° to 77°F)** [see USP Controlled Room temperature].

Hydrocortisone Butyrate Topical Solution, 0.1%: **Store between 5°- 25°C (41°-77°F).**

Mfd. by: Taro Pharmaceutical Industries Ltd., Haifa Bay, Israel 26110

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